ABSTRACT OF THE DISCLOSURE

The present invention provides a highly efficient fuel cell power supply unit, which is constructed by directly connecting a fuel cell with a capacitor. In this power supply unit, a control device of the unit calculates the output voltage V_2 of the fuel cell after the variation of electrical load based on the synthetic current-voltage characteristics of the fuel cell and the capacitor and the predetermined width of the variation of electrical load ΔI, calculates the corresponding current Ifc_2', and then calculates the equilibrium reacting gas supply amount Qa_1, and supplies an excess amount of the reacting gas exceeding Qa_1 before the variation of electrical load.